

FIG. 1 (PRIOR ART)

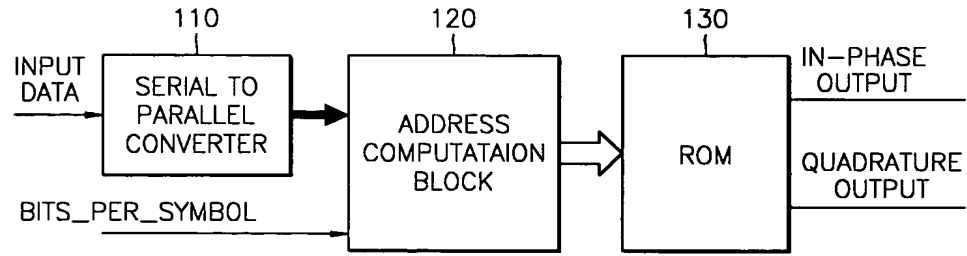


FIG. 2 (PRIOR ART)

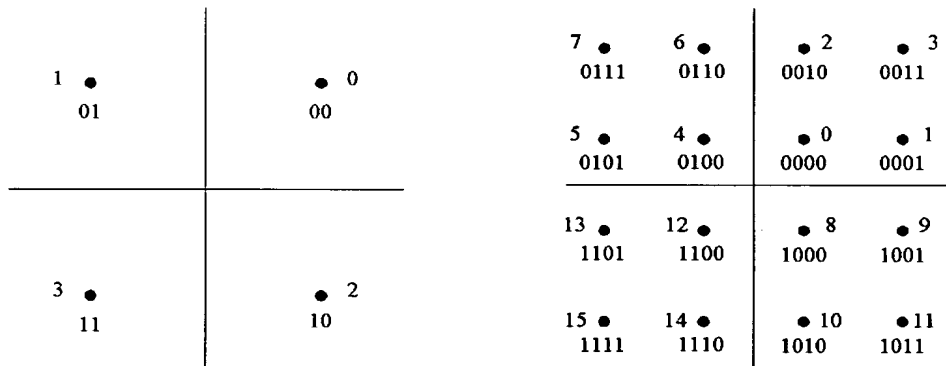


FIG. 3 (PRIOR ART)

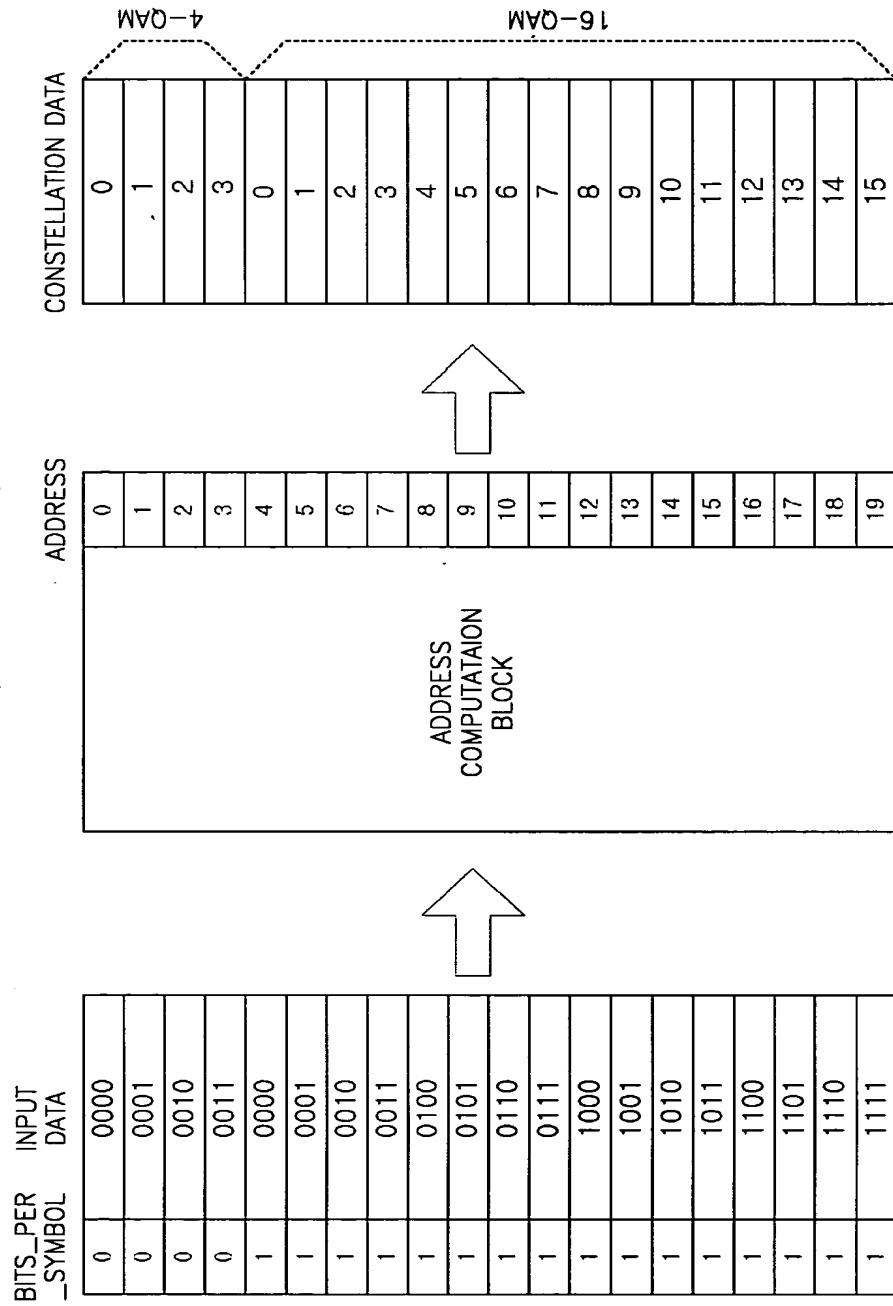


FIG. 4A

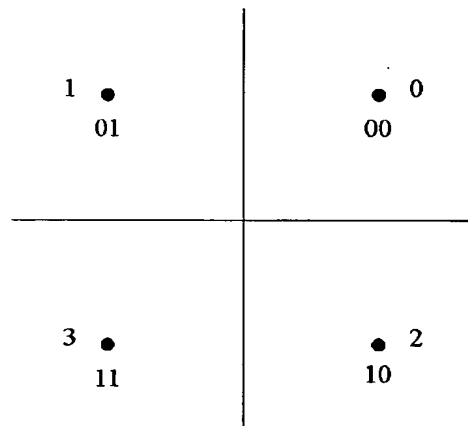


FIG. 4B

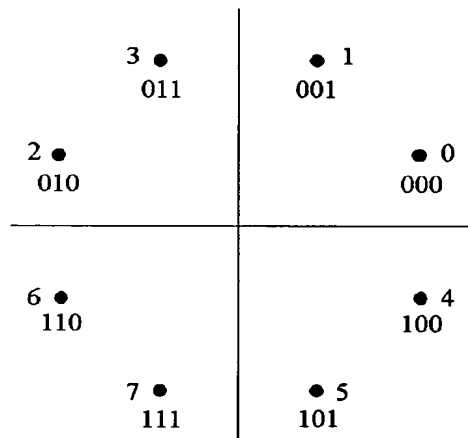


FIG. 4C

7 ● 0111	6 ● 0110	● 2 0010	● 3 0011
5 ● 0101	4 ● 0100	● 0 0000	● 1 0001
13 ● 1101	12 ● 1100	● 8 1000	● 9 1001
15 ● 1111	14 ● 1110	● 10 1010	● 11 1011

FIG. 4B

10 ● 01010	14 ● 01110	● 6 00110	● 2 00010		
16 ● 01111	13 ● 01101	12 ● 01100	● 4 00100	● 5 00101	● 7 00111
11 ● 01011	9 ● 01001	8 ● 01000	● 0 00000	● 1 00001	● 3 00011
27 ● 11011	25 ● 11001	24 ● 11000	● 16 10000	● 17 10001	● 19 10011
31 ● 11111	29 ● 11101	28 ● 11100	● 20 10100	● 21 10101	● 23 10111
26 ● 11010	30 ● 11110	● 22 10110	● 18 10010		

FIG. 4E

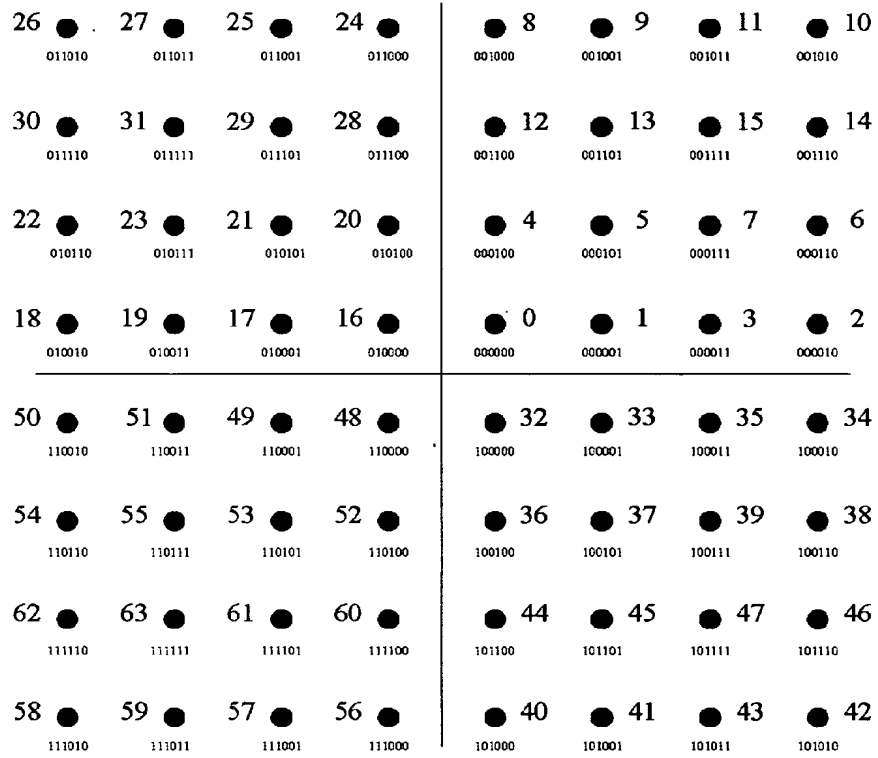


FIG. 4F

44 ● 0101100	45 ● 0101101	61 ● 0111101	60 ● 0111100	28 ● 0011100	29 ● 0011101	13 ● 0001101	12 ● 0001100				
36 ● 0100100	37 ● 0100101	53 ● 0110101	52 ● 0110100	20 ● 0010100	21 ● 0010101	5 ● 0000101	4 ● 0000100				
55 ● 0110111	54 ● 0110110	50 ● 0110010	51 ● 0110011	49 ● 0110001	48 ● 0110000	16 ● 0010000	17 ● 0010001	19 ● 0010011	18 ● 0010010	22 ● 0010110	23 ● 0010111
63 ● 0111111	62 ● 0111110	58 ● 0111010	59 ● 0111011	57 ● 0111001	56 ● 0111000	24 ● 0011000	25 ● 0011001	27 ● 0011011	26 ● 0011010	30 ● 0011110	31 ● 0011111
47 ● 0101111	46 ● 0101110	42 ● 0101010	43 ● 0101011	41 ● 0101001	40 ● 0101000	8 ● 0001000	9 ● 0001001	11 ● 0001011	10 ● 0001010	14 ● 0001110	15 ● 0001111
39 ● 0100111	38 ● 0100110	34 ● 0100010	35 ● 0100011	33 ● 0100001	32 ● 0100000	0 ● 0000000	1 ● 0000001	3 ● 0000011	2 ● 0000010	6 ● 0000110	7 ● 0000111
103 ● 1100111	102 ● 1100110	98 ● 1100010	99 ● 1100011	97 ● 1100001	96 ● 1100000	64 ● 1000000	65 ● 1000001	67 ● 1000011	66 ● 1000010	70 ● 1000110	71 ● 1000111
111 ● 1101111	110 ● 1101110	106 ● 1101010	107 ● 1101011	105 ● 1101001	104 ● 1101000	72 ● 1001000	73 ● 1001001	75 ● 1001011	74 ● 1001010	78 ● 1001110	79 ● 1001111
127 ● 1111111	126 ● 1111110	122 ● 1111010	123 ● 1111011	121 ● 1111001	120 ● 1111000	88 ● 1011000	89 ● 1011001	91 ● 1011011	90 ● 1011010	94 ● 1011110	95 ● 1011111
119 ● 1110111	118 ● 1110110	114 ● 1110010	115 ● 1110011	113 ● 1110001	112 ● 1110000	80 ● 1010000	81 ● 1010001	83 ● 1010011	82 ● 1010010	86 ● 1010110	87 ● 1010111
100 ● 1100100	101 ● 1100101	117 ● 1110101	116 ● 1110100	84 ● 1010100	85 ● 1010101	69 ● 1000101	68 ● 1000100	92 ● 1011100	93 ● 1011101	77 ● 1001101	76 ● 1001100
108 ● 1101100	109 ● 1101101	125 ● 1111101	124 ● 1111100	92 ● 1011100	93 ● 1011101	77 ● 1001101	76 ● 1001100				

FIG. 4G



FIG. 5

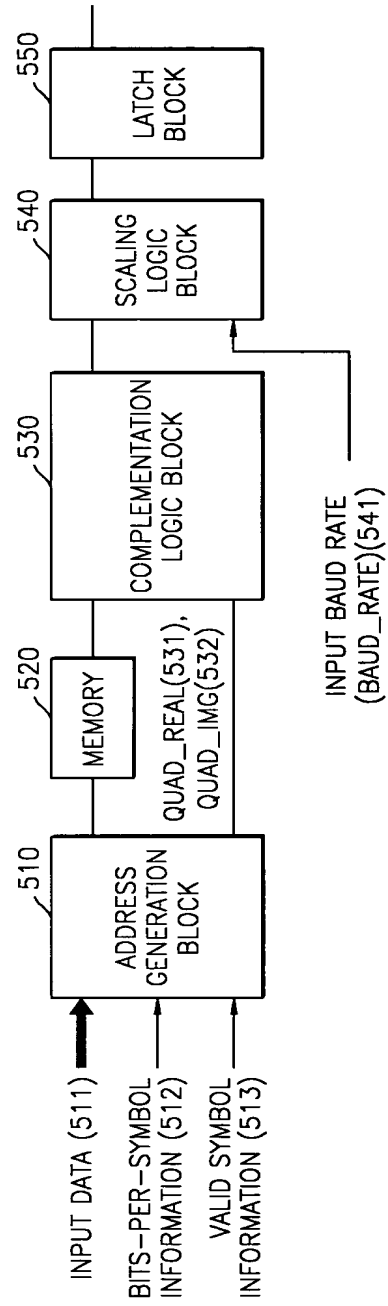
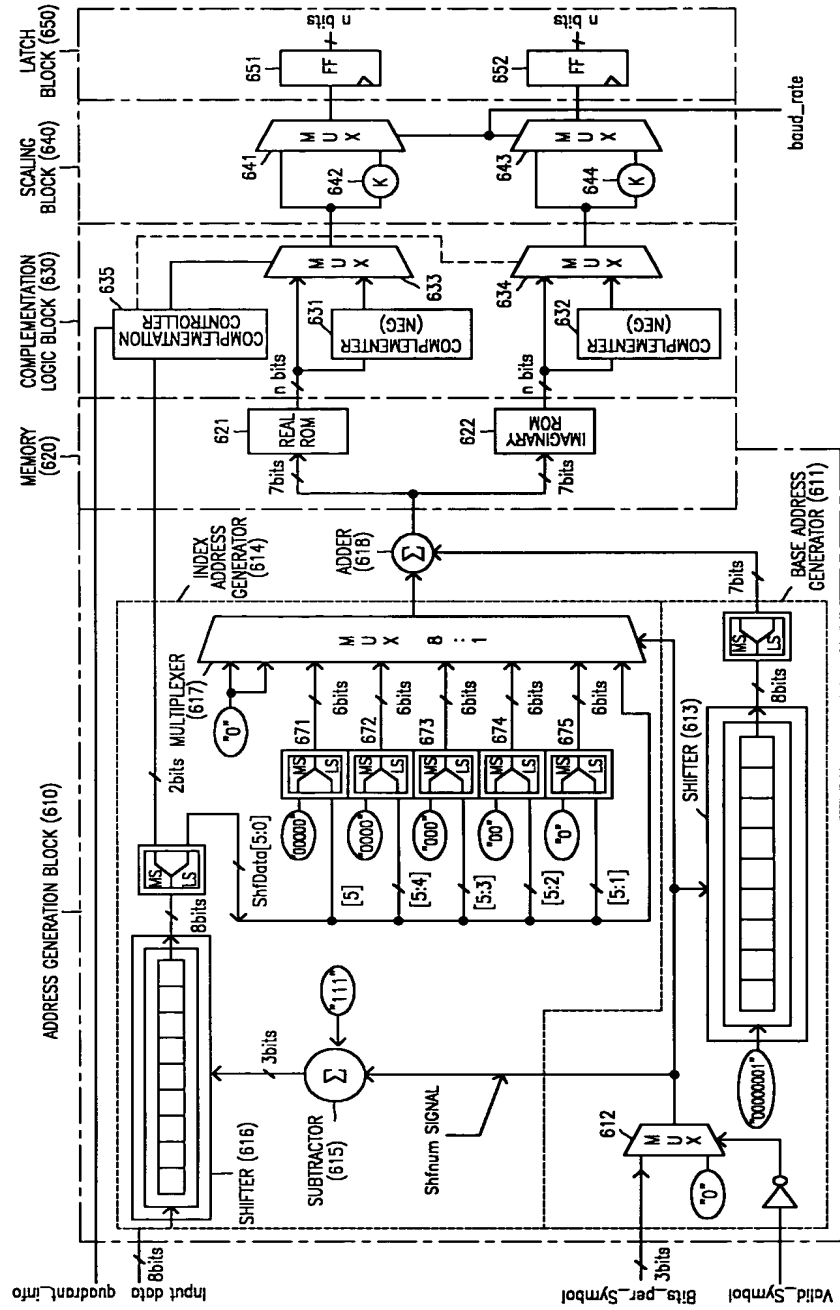




FIG. 6



**FIG. 7**

Bits-per-Symbol	VALID INPUT DATA BITS 7th -> 0th bit (X: not valid)
"000"	"XXXXXXXX"
"001"	"XXXXXX00"
"010"	"XXXXX000"
"011"	"XXXX0000"
"100"	"XXX00000"
"101"	"XX000000"
"110"	"X0000000"
"111"	"00000000"

FIG. 8

address	ROM Data
0	zero symbol
1	qpsk r(0)
2	8-psk r(0)
3	8-psk r(1)
4	16-qam r(0)
5	16-qam r(1)
6	16-qam r(2)
7	16-qam r(3)
⋮	
65	256-qam r(0)
66	256-qam r(1)
67	256-qam r(2)
⋮	
127	256-qam r(63)

address	ROM Data
0	zero symbol
1	qpsk I(0)
2	8-psk I(0)
3	8-psk I(1)
4	16-qam I(0)
5	16-qam I(1)
6	16-qam I(2)
7	16-qam I(3)
⋮	
65	256-qam I(0)
66	256-qam I(1)
67	256-qam I(2)
⋮	
127	256-qam I(63)

**FIG. 9**

Bits-per-Symbol	VALID INPUT DATA BITS 7th → 0th bit (X: not valid)	Shfnum	INPUT DATA SHIFTED BY AS MUCH AS 7-Shfnum (X: not valid)
"000"	"XXXXXXXX"	0	"00000000"
"001"	"XXXXXXQQ"	1	"QQ000000"
"010"	"XXXXXQQB"	2	"QQB00000"
"011"	"XXXXQQBB"	3	"QQBB0000"
"100"	"XXXQBBBB"	4	"QQBBBB000"
"101"	"XXQBBBBB"	5	"QQBBBBB00"
"110"	"XQBBBBBB"	6	"QQBBBBBB0"
"111"	"QQBBBBBB"	7	"QQBBBBBBB"

**FIG. 10A**

$S1=qi1, S0=qr0$

QUARDANT	qi1	qr0	S1	S0
I	0	0	+	+
II	0	1	-	+
III	1	1	-	-
IV	1	0	+	-

**FIG. 10B**

$S1=qi1, S0=qr0'$

QUARDANT	qi1	qr0	S1	S0
I	0	0	+	-
II	0	1	+	+
III	1	1	-	+
IV	1	0	-	-

**FIG. 10C**

$$S1=qi1', S0=qr0'$$

QUARDANT	qi1	qr0	S1	S0
I	0	0	-	-
II	0	1	-	+
III	1	1	+	+
IV	1	0	+	-

**FIG. 10D**

$$S1=qi1', S0=qr0$$

QUARDANT	qi1	qr0	S1	S0
I	0	0	-	+
II	0	1	-	-
III	1	1	+	-
IV	1	0	+	+

FIG. 11

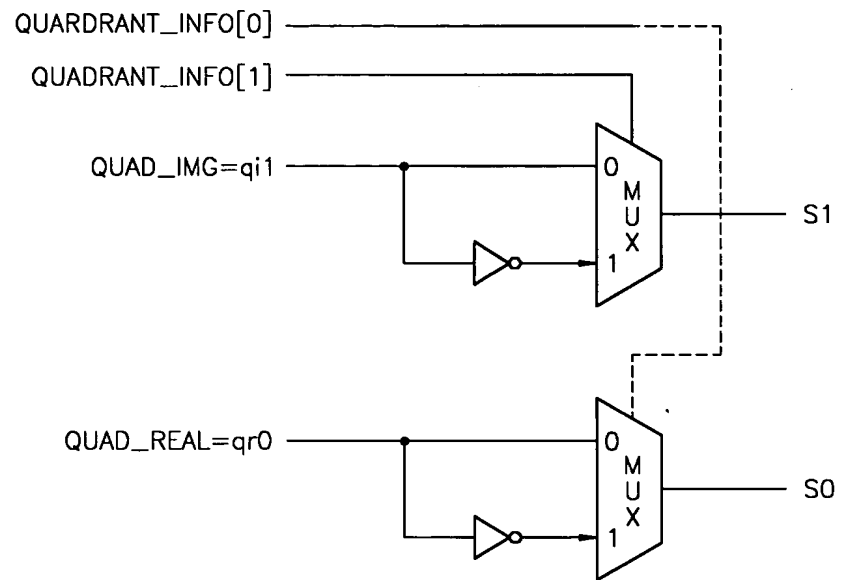


FIG. 12

